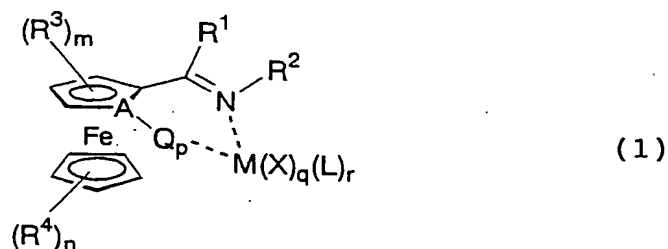


AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): A transition metal compound represented by the following formula (1):



wherein M represents a transition metal atom selected from the group consisting of metal atoms of group 3 to group 12 of the periodic table;

X represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbyloxy group having 1 to 20 carbon atoms, an amino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a sulfonate group having an organic residue with 1 to 20 carbon atoms, or a non-coordinative anion containing an element selected from the group consisting of B, B, Al, P and Sb, and, when q is an integer of at least 2, Xs may be the same as or different from each other;

A represents a carbon atom, a nitrogen atom or a phosphorus atom;

R¹ represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one halogen atom, or a ferrocenyl group or a substituted ferrocenyl group;

R² R² represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected

from the group consisting of halogen, silicon, nitrogen, oxygen and sulfur atoms, or a ferrocenyl group or a substituted ferrocenyl group; and R^1 and R^2 may form together a ring;

Q represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an amino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, phosphorus, oxygen and sulfur atoms, or oxygen or sulfur; and, when Q contains a coordinative atom, Q can be coordinatively bound to M;

R^3 represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, oxygen, halogen and sulfur atoms and one of R^3 's adjacent to Q may form a ring together with Q; and, when m is an integer of at least 2, R^3 's may be the same as or different from each other, and adjacent R^3 's may form together a ring;

R^4 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen,

phosphorus, oxygen, halogen and sulfur atoms; and, when n is an integer of at least 2, R^4 s may be the same as or different from each other, and adjacent R^4 s may form together a ring; and R^3 and R^4 may form together a ring; and, when R^4 contains a heteroatom, R^4 can coordinate with the transition metal atom M ;

L is a coordinate bond-forming compound selected from the group consisting of π electron, ethers, nitriles, amines and phosphines, and L may be bound to X ;

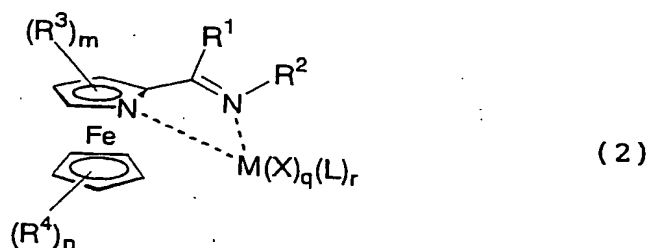
m is an integer of 1 to 3, n is an integer of 1 to 5, and p is an integer of 0 or 1;

when Q is sulfur or oxygen, the bond between Q and M is a sigma bond;

when p is 0 and A is a nitrogen atom or a phosphorus atom, A can be coordinatively bound to M ; and

q is an integer of 1 to 3 and r is an integer of 0 to 3.

Claim 2 (Original): A transition metal compound represented by the following formula (2):



wherein M represents a transition metal atom selected from the group consisting of metal atoms of group 3 to group 12 of the periodic table;

X represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a sulfonate group having an organic residue with 1 to 20 carbon atoms, or a

non-coordinative anion containing an element selected from the group consisting of B, Al, P and Sb, and, when q is an integer of at least 2, Xs may be the same as or different from each other;

R^1 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one halogen atom, or a ferrocenyl group or a substituted ferrocenyl group;

R^2 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of halogen, silicon, nitrogen, oxygen and sulfur atoms, or a ferrocenyl group or a substituted ferrocenyl group; and R^1 and R^2 may form together a ring;

R^3 represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, oxygen, halogen and sulfur atoms and, when m is an integer of at least 2, R^3 s may be the same as or different from each other, and adjacent R^3 s may form together a ring;

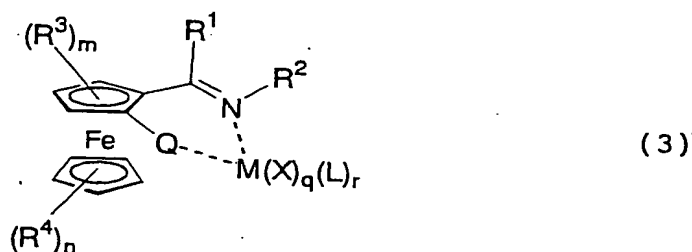
R^4 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, phosphorus, oxygen, halogen and sulfur atoms; and, when n is an integer of at least 2, R^4 s

may be the same as or different from each other, and adjacent R^4 s may form together a ring;
and R^3 and R^4 may form together a ring;

L is a coordinate bond-forming compound selected from the group consisting of π electron, ethers, nitriles, amines and phosphines, and L may be bound to X;

m is an integer of 1 to 3, n is an integer of 1 to 5, q is an integer of 1 to 3 and r is an integer of 0 to 3.

Claim 3 (Original): A transition metal compound represented by the following formula (3):



wherein M represents a transition metal atom selected from the group consisting of metal atoms of group 3 to group 12 of the periodic table;

X represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbyloxy group having 1 to 20 carbon atoms, an amino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a sulfonate group having an organic residue with 1 to 20 carbon atoms, or a non-coordinative anion containing an element selected from the group consisting of B, Al, P and Sb, and, when q is an integer of at least 2, Xs may be the same as or different from each other;

R^1 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one halogen atom, or a ferrocenyl group or a substituted ferrocenyl group;

R^2 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of halogen, silicon, nitrogen, oxygen and sulfur atoms, or a ferrocenyl group or a substituted ferrocenyl group; and R^1 and R^2 may form together a ring;

Q represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an amino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, phosphorus, oxygen and sulfur atoms, or oxygen or sulfur; and, when Q contains a coordinative atom, Q can be coordinatively bound to M;

R^3 represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, oxygen, halogen and sulfur atoms, and one of R^3 's adjacent to Q may form a ring together with Q; and, when m is an integer of at least 2, R^3 's may be the same as or different from each other, and adjacent R^3 's may form together a ring;

R^4 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, phosphorus, oxygen, halogen and sulfur atoms; and, when n is an integer of at least 2, R^4 s may be the same as or different from each other, and adjacent R^4 s may form together a ring; and R^3 and R^4 may form together a ring; and, when R^4 contains a heteroatom, R^4 can coordinate with the transition metal atom M ;

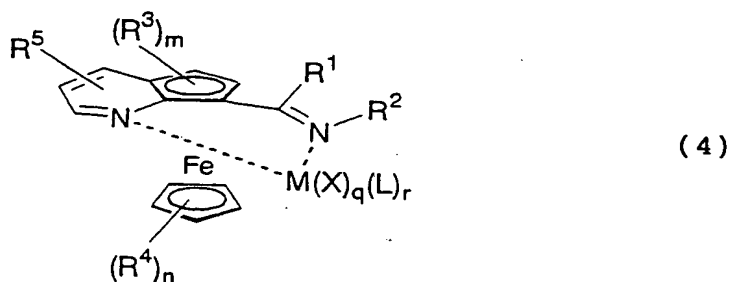
L is a coordinate bond-forming compound selected from the group consisting of π electron, ethers, nitriles, amines and phosphines, and L may be bound to X ;

m is an integer of 1 to 3 and n is an integer of 1 to 5;

when Q is sulfur or oxygen, the bond between Q and M is a sigma bond; and

q is an integer of 1 to 3 and r is an integer of 0 to 3.

Claim 4 (Original): A transition metal compound represented by the following formula (4):



wherein M represents a transition metal atom selected from the group consisting of metals of group 3 to group 12 of the periodic table;

X represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a sulfonate group having an organic residue with 1 to 20 carbon atoms, or a non-coordinative anion containing an element selected from the group consisting of B, Al, P and Sb, and, when q is an integer of at least 2, Xs may be the same as or different from each other;

R¹ represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a trifluoromethyl group, a ferrocenyl group or a substituted ferrocenyl group;

R² represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of silicon, nitrogen, oxygen and sulfur atoms, or a ferrocenyl group or a substituted ferrocenyl group; and R¹ and R² may form together a ring;

R³ represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms or a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms; and, when m is an integer of at least 2, R³s may be the same as or different from each other;

R⁴ represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, phosphorus, oxygen, halogen and sulfur atoms; and, when n is an integer of at least 2, R⁴s may be the same as or different from each other, and adjacent R⁴s may form together a ring;

R^5 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms or an amino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms;

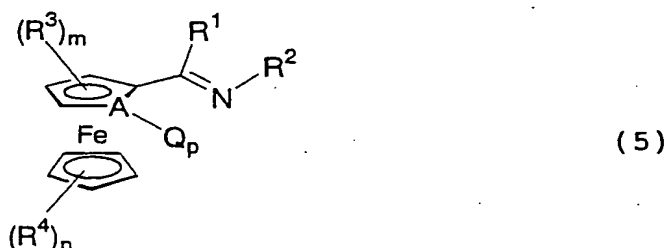
L is a coordinate bond-forming compound selected from the group consisting of π electron, ethers, nitriles, amines and phosphines, and L may be bound to X;

m is an integer of 1 or 2, n is an integer of 1 to 5, q is an integer of 1 to 3 and r is an integer of 0 to 3.

Claim 5 (Original): The transition metal compound according to any one of claims 1 to 4, wherein M represents a transition metal atom selected from the group consisting of metal atoms of group 8 to group 12 of the periodic table.

Claim 6 (Original): The transition metal compound according to any one of claims 1 to 4, wherein M represents a transition metal atom selected from the group consisting of Ni, Pd, Fe and Cu.

Claim 7 (Original): A coordinative compound represented by the following formula (5):



wherein A represents a carbon atom, a nitrogen atom or a phosphorus atom;

R^1 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one halogen atom, or a ferrocenyl group or a substituted ferrocenyl group;

R^2 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of halogen, silicon, nitrogen, oxygen and sulfur atoms, or a ferrocenyl group or a substituted ferrocenyl group; and R^1 and R^2 may form together a ring;

Q represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an amino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, phosphorus, oxygen and sulfur atoms, or a hydroxyl group or a thiol group;

R^3 represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, oxygen, halogen and sulfur atoms and one of R^3 's adjacent to Q may form a ring together with Q; and, when m is an integer of at least 2, R^3 's may be the same as or different from each other, and adjacent R^3 's may form together a ring;

R^4 represents a hydrogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a

phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, phosphorus, oxygen, halogen and sulfur atoms; and, when n is an integer of at least 2, R^4 s may be the same as or different from each other, and adjacent R^4 s may form together a ring; and R^3 and R^4 may form together a ring; and

m is an integer of 1 to 3, n is an integer of 1 to 5, and p is an integer of 0 or 1.

Claim 8 (Original): A compound which is a precursor to the coordinative compound represented by formula (5) shown in claim 7, and which is represented by the following formula (6):



wherein R^3 represents a hydrogen atom, a halogen atom, a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, oxygen, halogen and sulfur atoms and, when m is an integer of at least 2, R^3 s may be the same as or different from each other, and adjacent R^3 s may form together a ring;

R^4 represents a hydrocarbon group having 1 to 20 carbon atoms, a silyl group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, a phosphino group having one or more hydrocarbon groups each with 1 to 20 carbon atoms, an oxy group having a hydrocarbon group with 1 to 20 carbon atoms, a thio group having a hydrocarbon group with 1 to 20 carbon atoms, or a hydrocarbon group having 1 to 20 carbon atoms and containing at least one atom selected from the group consisting of nitrogen, phosphorus, oxygen, halogen and sulfur atoms; and, when n is an integer of 1, R^4 is not a methyl group; and when n is an integer of at least 2, R^4 s may be the same as or different from each other, and all of the R^4 s are not simultaneously a methyl group; and adjacent R^4 s may form together a ring; and R^3 and R^4 may form together a ring; and

m is an integer of 1 to 3 and n is an integer of 1 to 5.

Claim 9 (Original): A catalyst for polymerization of an olefin, which comprises the transition metal compound as claimed in any one of claims 1 to 4.

Claim 10 (Original): A catalyst for polymerization of an olefin, which comprises the transition metal compound as claimed in any one of claims 1 to 4, and an activating cocatalyst.

Claim 11 (Original): A process for polymerization of an olefin, which comprises polymerizing an olefin in the presence of a catalyst comprising the transition metal compound as claimed in any one of claims 1 to 4.

Claim 12 (Original): A process for polymerization of an olefin, which comprises polymerizing an olefin in the presence of a catalyst comprising the transition metal compound as claimed in any one of claims 1 to 4, and an activating cocatalyst.

SUPPORT FOR THE AMENDMENT

This Amendment amends the specification and independent Claim 1 to correct typographical errors appearing in the original specification and in U.S. Patent Publ. No. 2002/0120160, which published from the above-identified application.

In particular, the original specification at page 2, lines 22-31, (aka [0007] in 2002/0120160) is amended by replacing the self-evident error "chelete" with --chelate--.

The original specification at page 42, lines 4-21 (aka [0069]-[0070]) is amended by replacing the self-evident error "propton" with --proton--.

The original specification from page 50, line 24 to page 51, line 1 (aka [0103]) is amended by replacing "1 liter autoclave" with --autoclave--. The phrase "1 liter autoclave" is an error and inconsistent with "two liter autoclave" occurring in paragraphs [0125], [0128], [0165] and [0168], and inconsistent with "100 milli-liter glass autoclave" occurring in paragraph [0126].

The original specification at page 54, lines 25-27, (aka [0117]) is amended by replacing the self-evident error "d." with --t--.

The original specification at page 57, lines 16-27, (aka [0126]) is amended by replacing the self-evident error "100 liter" with --100 milli-liter--.

The original specification at page 63, lines 5-14, (aka [0147]) is amended by replacing the self-evident error "2-formylazaazaferrocene " with --2-formylazaferrocene--.

The original specification at page 63, lines 19-30, (aka [0149]); page 64, line 20 to page 65, line 1 (aka [0153]); and page 65, line 21 to page 66, line 2 (aka [0156]) is amended by replacing the self-evident error "dichrolomethane" with --dichloromethane--, which appears correctly elsewhere in [0149] and [0153].